# The Significance of Error Type in Text-Based Person Perception

## John W. Harden
### *Faculty Advisor: Lora L. Jacobi, Ph.D.*
### *Stephen F. Austin State University*

## Introduction

Previous research has suggested that errors of spelling can somewhat negatively impact reader perceptions of an author's writing and cognitive abilities (e.g., Kreiner, Schnakenberg, Green, Costello, & McClin 2002; Harden, Johnson, West, & Lancaster 2009). Past research, however, has not take into account the differences inherent in certain error types. The current research sought to extend upon previous findings with the inclusion of a new error type. The new error type is referred to as an error of orthography, and is operationally defined as an error of spelling that might impact the context of the sentence to which it belongs (e.g., "which" versus "witch").

### *Previous Findings on Error Number:*



Error and Perceived Intelligence
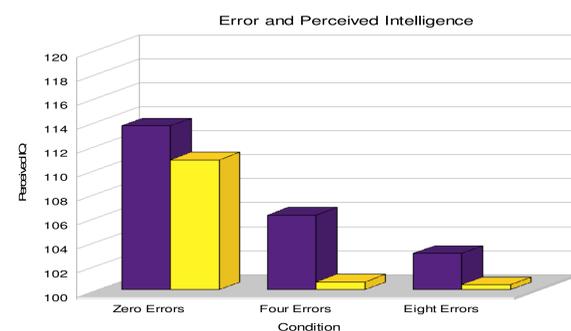
*Note: The observed difference between Four errors and Eight errors was marginally significant with student participants; p < .051, but not significant with faculty participants; p = .996.

## Method

### *Participants:*

Participants for this experiment were drawn from a pool of undergraduate participants. In total, 191 students participated in the study (166 female, 25 male).

*All participants responded to the survey online.*

### *Procedure:*

Initially, a publicly available freshman-level writing sample of 304 words was presented to participants with two, six, or ten errors. Participants were then asked to rate the author on a standardized scale of intelligence (the Intelligence Quotient) and estimate the author's performance on portions of a standardized graduate level examination (the Graduate Record Exam) by responding numerically to free response items. Following this, participants completed a Person Perception Scale (PPS); this scale consisted of 5 items that addressed subjective ratings of the writer. Participants were asked to indicate their level of agreement with several subjective statements about the author using a 5-point Likert scale.
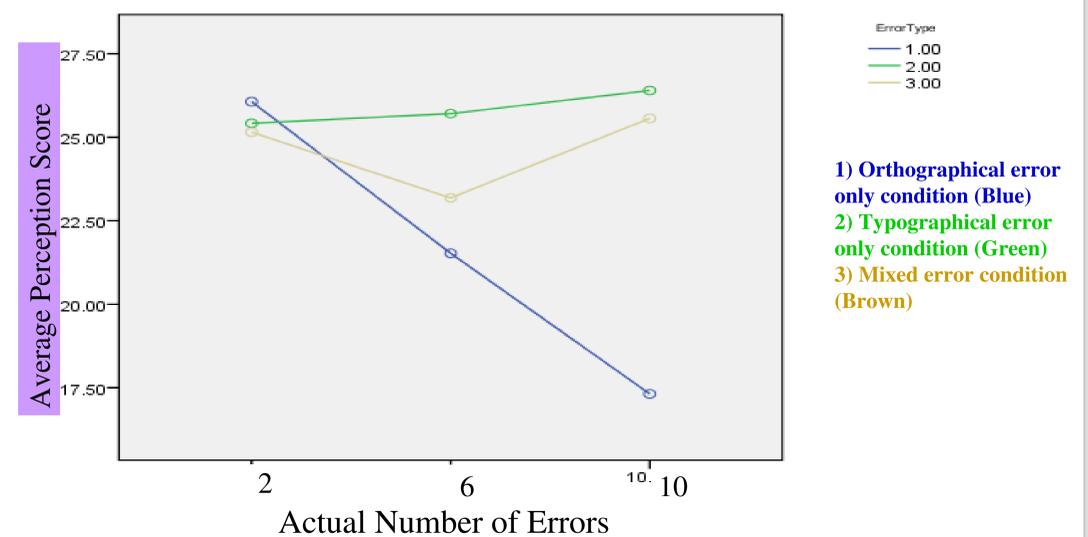
The experiment employed a 3 (Error Type: orthographical, typographical, orthographical and typographical) x 3 (Number of Errors: two, six, and ten) factorial design.

## Results

First, the Person Perception Scale (PPS) was analyzed using Cronbach's alpha and found to be internally consistent (alpha = .92). From the PPS, an "ideal student" construct was established that was a collective measurement of the subjective items.

A 3x3 analysis of variance (ANOVA) indicated that the difference in effect between orthographic errors and simple, typographical errors was significant ($p < .001$) across generalized perceptions of the author. An LSD post hoc test indicated that the effect of orthographical errors was significantly different than that of typographical errors when measuring estimations of the author's IQ ($p = .017$) and with estimations of the author's undergraduate grade point average ($p = .004$). As hypothesized, the mean rating of the author's IQ was significantly lower with orthographical errors ($M = 97.2$, $SD = 19.32$) than with typographical errors ($M = 104.98$, $SD = 18.67$). The vignette with orthographical errors were also rated significantly lower ($M = 2.80$, $SD = .50$) than the vignette with typographical errors ($M = 3.03$, $SD = .44$).

### *Error Type on Estimations of the "Ideal Student" Construct:*



1) Orthographical error only condition (Blue)
2) Typographical error only condition (Green)
3) Mixed error condition (Brown)

*NB: Although the third data point in the mixed error condition (the brown line) appears anomalous, it is not statistically different from the second data point.

## Conclusion

These findings are generally consistent with previous literature (e.g., Kreiner, Schnakenberg, Green, Costello, & McClin 2002; Harden, Johnson, West, & Lancaster 2009). The extension of errors of orthography, however, indicates that some error types might be significantly more damaging for an author than other error types. This is particularly important in professional settings in which applicants are seeking a professional position. These findings are crucial, given that the types of errors that have the largest negative impact on perceptions of an author are those errors that are not typically detected by modern automated spell-checkers.

John Harden, Dept. of Psychology, Stephen F. Austin State University  hardenjw@sfasu.edu